

Research Community Panel

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Workshop on the Health Impact Assessment of New Energy

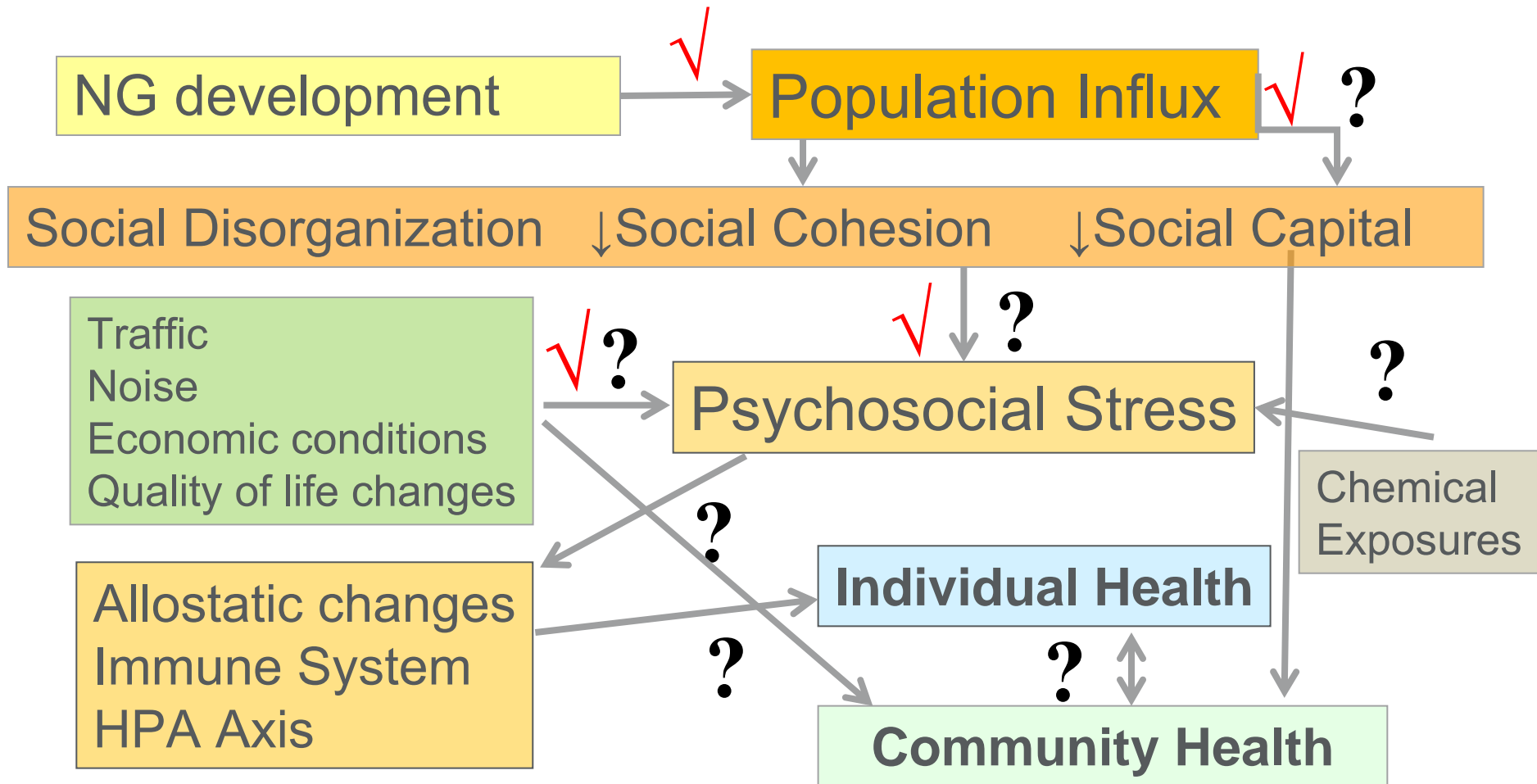
Sources: Shale

April 30-May 1, 2012

Evidence linking natural gas development , community impacts, health effects

- Very little direct evidence linking community impacts of natural gas development to health effects
- Draw on literature looking at environment, stress and health to create a framework for future research

Evidence / Uncertainty for NGD Impact on Community and Health



Community Impacts Research

- 1) Community Impacts- longitudinal: pre/post
 - STI, crime, social services, economic status, etc. (organized →disorganized)
 - Survey community experience (level of social cohesion, social capital)
- *Document impacts at community level to direct community interventions*

Community Impacts Research

- 2) Intermediary endpoints associated with NG exposures
 - Stress
 - *Biomarkers- HRV, cortisol, c-reactive protein, TNF- α , NFKappaB signaling, heart rate variability*
 - *Surveys- perceived stress, negative affect*
 - Change in individual behavior
 - *Decreased exercise, increased substance abuse (tobacco, ETOH)*
 - *Survey*
 - *Understand the exposures that cause stress, monitor interventions*

Community Impacts Research

3) Health endpoints

- Multilevel analysis to include environmental and individual risk factors
 - *Cardiovascular*
 - *Pulmonary* *Stress metrics*
 - *Endocrine*
 - *Immunologic* *Disrupted community*
 - *Cancer*
 - *Mental health*
- *Understand the link between environment, stress and health*